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ABSTRACT

The model described here was developed for use as a program planning guide by teachers, many of them business and other lay people, at the secondary school level who offer adult education courses on how to make management decisions and solve problems. Ten features of the model are listed: (1) The purpose is to assist owner-operators or managers to become successfully established in a specific undertaking as an entrepreneur; (2) owner-operators and managers are the main clientele; (3) recruitment is carried out by the teacher; (4) personal contacts must be used in recruiting enrollees; (5) assessment of the learners' needs is done jointly by the teacher and individual enrollees; (6) instructional focus is on making intelligent management decisions; (7) subject matter is organized in a problem-solving format; (8) on-job instruction is characteristic; (9) enrollees' association for activities other than instruction is an optional feature; and (10) evaluation is focused on program results as evidenced by class members' progress toward successful establishment. This booklet includes a description of adult learners; the implementation of the model including making administrative arrangements, recruiting, determining instructional needs, planning the program, planning for teaching the instructional units, using teaching tools, and giving on-job instruction; and result-centered evaluation. A table on when and how to use 29 different teaching tools is appended. (EM)

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Teaching Adult Education Courses: The Business Management Model

by Joe P. Ball and Harold R. Cushman

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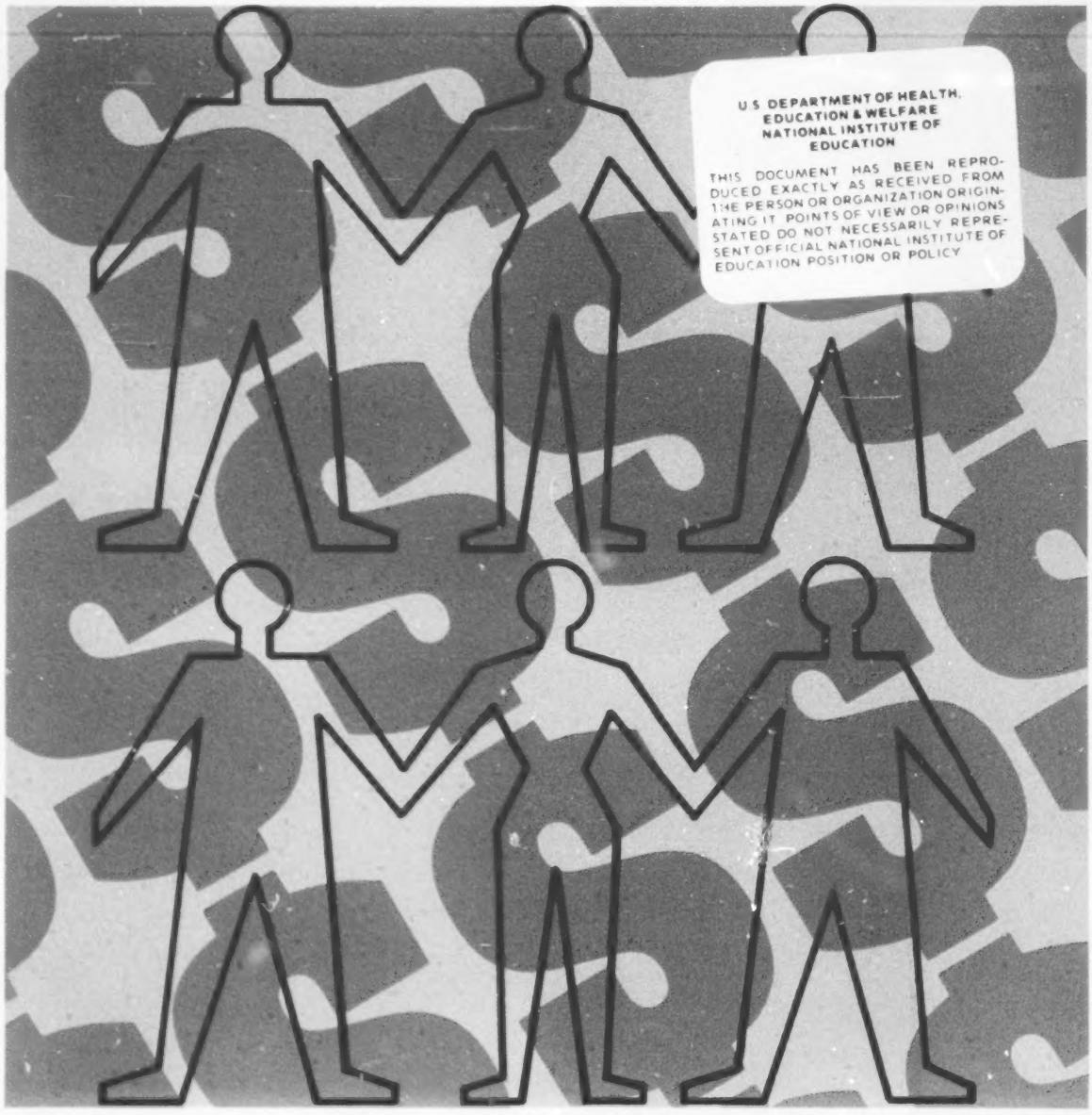

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Teaching Adult Education Courses:

The Business Management Model

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PREFACE

Are you a busy person? Do you find it hard to find time to read? Do you like to make sure you are on the right track before you invest what little time you have in a given publication? If you are planning to teach an adult education course, we think your answer to all three questions will be "Yes." For that reason, we will devote our opening remarks to answering four questions that should help you decide whether to read this bulletin.

A. What is the Content?

This publication consists of a series of guidelines and procedures for organizing and conducting adult education courses that teach people how to make management decisions and solve problems. In the first section we describe the unique features of the business management model, tell you where to use it and where not to, and describe some of the things you need to know about adult learners before you start to teach them.

In the second section we deal with such aspects of a business management course as: making administrative arrangements, recruiting, determining instructional needs, planning the instructional program, planning for teaching, using specific teaching tools, and giving on-job instruction.

In the third and final section, guidelines and procedures for conducting a result-centered evaluation are featured.

B. For Whom Was It Written?

Our intention was to address that group of teachers who offer adult education courses at the secondary school level dealing with decision making. Regular teachers are less apt to teach these courses than in the past. Their salaries are at an all-time high. The shorter work week prevails. And their bosses put less pressure on them. Therefore, business people and other lay people teach more and more of the adult education courses. They bring excellent technical and subject matter qualifications to their teaching assignments; but they do not always possess expertise in how to teach adults. This is the audience we have addressed directly. Actually though, we believe that all sorts of beginners in a wide variety of program settings will find this material helpful. If your adult education course attempts to teach people how to solve problems or make management decisions, this publication was written for you.

C. Why Was It Written?

Adult education at the secondary level is growing rapidly. Many people pursue interests that will add meaning to their lives. Other adults up-grade marketable skills that will make them more valuable employees. And still others improve their decision making ability. Teaching adult education courses for self-fulfillment, employee training, and business management are three different situations. Each has its own rules. We are especially concerned that beginning teachers have a chance to learn the rules for teaching business management courses before they are called on to teach.

D. How Was It Developed?

Since 1972 an effort has been made at Cornell University to spell out and clarify alternative models for organizing, teaching, and evaluating adult education courses. Three objectives have been central: (a) To describe the features of alternative procedural models; (b) to try out and revise the models to fit the actual conditions in which teachers work; and (c) to place the models in the hands of the teachers who need them the most.

Phase 1. Construction and description of the alternative models.

Ideas garnered from the literature and visits to 52 successful adult education courses were used to construct three models. The self-fulfillment model is used with people who want to pursue interests which will add meaning to their lives. The employee training model is for improving people's specific technical competencies related to employment. And the business management model is for helping owner-operators or managers to become successfully established in a profitable enterprise. Eleven experienced teachers reviewed the first draft and their ideas were used to produce a revision.

Phase 2. Try-out and revision of the models under field conditions.

Fifteen adult education teachers tried out the models. During the school year we observed the teachers using the models and listened to their comments. At the end of the year they gave us extensive feedback in the form of suggestions for improvement.

Phase 3. Putting the models in the hands of teachers who can use them.

Four publications were written as an outcome of the project:

1. *Teaching Adult Education Courses: The Self-Fulfillment Model.*

2. *Teaching Adult Education Courses: The Employee Training Model.*
3. *Teaching Adult Education Courses: The Business Management Model.*
4. *17 Teaching Tools for Adult Educators.*

All were published by the New York State College of Agriculture and Life Sciences at Cornell and are available for a small charge from the Media Services Mailing Room, Building 7, Research Park, Ithaca, New York, 14853.

The *Self-Help Kit for Adult Education* including the four publications and several other references valuable for beginners is available from the Instructional Materials Service, Education Department, Cornell University, Ithaca, New York, 14853.

Also, we have presented our ideas before many groups of adult education leaders and teachers. We are available on a consultant basis for inservice education programs for adult education personnel—as time permits.

I. FUNDAMENTALS

The business management model is a very useful tool for teaching adults how to make decisions and solve problems. You'll find it equally effective with business people, farmers, homemakers, young people, senior citizens, people who want to buy homes, people who want to sell homes—in fact almost any group who have common problems.

This section focuses on what you can expect of the model and the adults who enroll in such courses. As you read, keep your eyes open for answers to the following questions: What are the unique features of the business management model? In what situations should you use it? Not use it? How will the adults in your class differ from the youngsters you went to school with? How will your class differ from the ones you remember from your school days? What purposes will the adults in your class have? Can your adults learn? How fast? How well? How can they help each other learn? What must you know about needs in order to use the business management model? What must you *be* in order to teach your adults successfully? What kinds of help must you give each of your learners?

The business management model is unique in many ways.

1. The main *purpose* of business management courses is to assist owner-operators or managers to *become successfully established* in a specific undertaking as an entrepreneur. This end is sought by teaching the adult learners to analyze their businesses to discover weaknesses, identify major problems, and make intelligent management decisions.

2. *Owner-operators and managers* are therefore the *main clientele* of such courses.

3. The *recruitment* of class members is carried out almost entirely *by the teacher.*

4. *Personal contacts* are a must procedure for the recruitment of enrollees in new business management courses. Experience has shown that only in this way can the teacher hope to sell the prospective class members on the merits of a new program.

5. The *instructional needs* of the learners are assessed by a joint effort of the teacher and individual enrollees. This procedure can be thought of as the *"figure it out with them"* approach. Some form of analysis of the business is nearly always made in order to identify high priority problems.

6. *The focus of instruction* is on making intelligent *management decisions.*

7. *A problem-solving format* is most useful for *organizing the subject matter* to be taught.

8. *On-job instruction* is a *special feature* of such courses.

9. *Association* of the enrollees for activities other than instruction is an *optional feature.*

10. *Evaluation* of business management courses focuses on the *results* of the program as evidenced by the progress of class members toward successful establishment.

Owner-operators and managers are the main clientele of business management courses.

The business management model is not easy to use, but you can master its use with a little effort.

1. You may find it helpful to visualize the business management model as a form of transportation—a vehicle used by the teacher to take the learner from where she or he is to some desired place. We have done this in figure 1. We chose the truck to symbolize this model because it is one of the most complex and useful forms of transportation. When it works, it's hard to beat. But it does require a trained operator.

2. Use this model when both your purpose in offering the course and that of your students is solving problems.

3. Don't use the business management model for teaching courses that focus on the self-fulfillment of the learners or employee training. That would be like using a truck to move a 50-pound bag of fertilizer 100 feet from your garage to the garden. Or giving your five year old a 50-minute lecture on anatomy when she asks why her pregnant mother has a big stomach.

4. The only way you can learn how to use any complex or sophisticated tool is to study up on the basics and then get some first-hand experience. If you can drive a truck you can learn to use the business management model.

5. Nevertheless, this model is a highly specialized and sophisticated tool. It is designed for just one purpose—teaching adults how to solve problems and make intelligent management decisions.

The adults in your business management course differ from the students with whom you went to school (1).

1. Most of the members of your class have something at stake or they wouldn't be there. You won't need to nag them into learning once they see the connection between management decisions and their goals.

2. They attend your class as a part-time activity.

3. You have less authority over your adult learners than your teachers had over you. They are more independent. And they'll ask "why" more often.

4. Your students have had valuable business experience. They've acquired know-how. And they've developed opinions.

5. They have more prejudices—some of which they are unaware of.

6. They are more fixed in their ways and are often harder to change.

7. They like to talk more in class—and they do.

8. Some of your students may be older than you are.

9. And as adults they will respect your sincerity in wanting to help them. If you win their respect they'll forgive many of your shortcomings.

Your business management class is likely to differ a lot from those you remember (1).

1. Learning how to solve real problems and make real management decisions will be much more important.

2. Your class will be less formal.

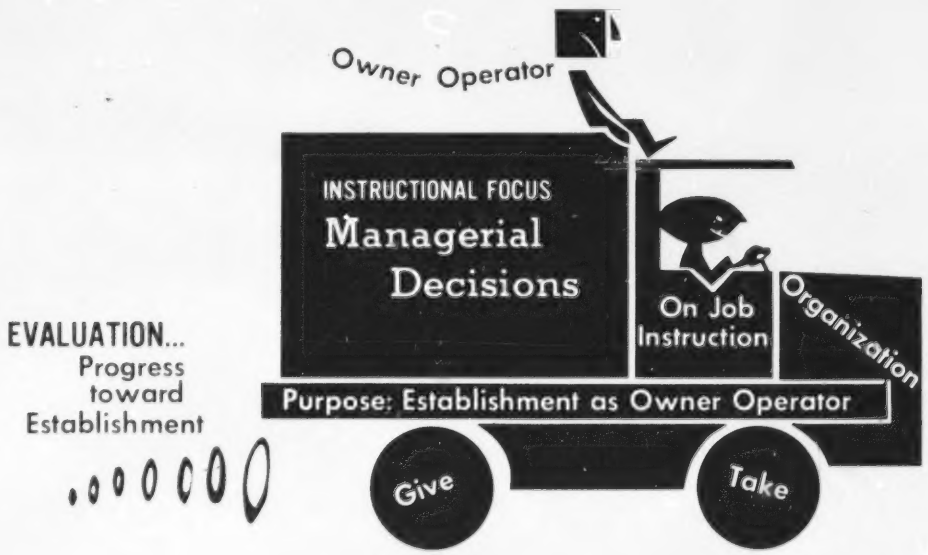


Figure 1. Business management model.

3. Memorization and paper and pencil tests will be much less important. Instead, the emphasis will be on where to get facts and how to weigh them in making decisions.

4. Your students will learn a lot from each other.

5. Your class will involve more group interaction.

Even though your purpose is to help the class members to become more successfully established in business, adults will enroll for a variety of reasons (2).

1. Some will enroll for occupational reasons such as:
   a. To improve their managerial skills.
   b. To increase their income and get ahead in life.
   c. To meet a requirement demanded by business or industry.
2. Others will enroll for self-fulfillment reasons such as:
   a. To fill leisure time with something meaningful.
   b. To interact with others who have similar interests.
   c. To satisfy their curiosity.

The adults enrolled in your class can learn (3, 4).

1. In the first place, chronological age is only one of many variables involved in the aging process.

2. Individual differences strongly influence learning.

3. Health, wealth, previous experience, education, and personality drastically influence the ability of people to learn.

4. Adult learning ability also varies with what is to be learned. You can be sure that owner-operators and managers will be able to increase their knowledge about problem solving and making managerial decisions.

5. All normal people continue to learn all of their lives.

You can anticipate that the general mental ability of your adult class members will be entirely acceptable (5).

1. Effective mental ability probably reaches its peak in the thirties.

2. When other factors are taken into account, very little difference in mental ability is related to age within the 18–60 age range.

3. A 75-year-old person and a youngster of 12 are similar in effective mental capacity.

4. Sustained mental activity, use of imagination, reasoning, and studying new sources of information may well be essential to effective mental growth in the twenties and thirties as well as its maintenance throughout the adult years.

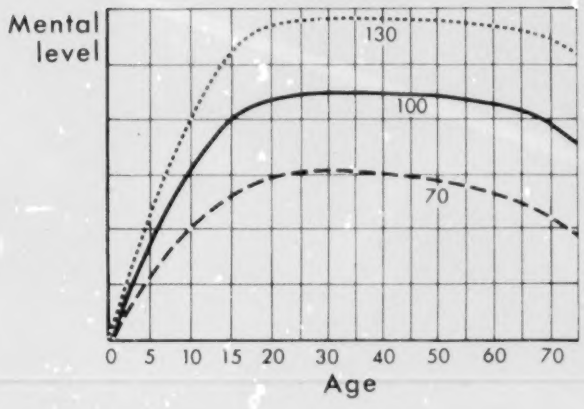


Figure 2. Growth and decline of general mental ability. Patterns of growth and decline of mental ability, as measured by general intelligence tests, are shown for a span of 75 years. Note that the horizontal scale is condensed after age twenty. The curves show the average course of change in mental level of three representative persons whose intelligence quotients (IQs) differ. The three have IQs of 70, 100, and 130, respectively. Seventy is the upper IQ limit of the least-retarded category; 100 is average; and 130 is the lower limit of the very superior classification. (Source: Sorenson (4). Reprinted with permission from McGraw-Hill.)

5. Learning may take just a bit longer for the elderly and occur at the individual's own speed instead of at an external and fast pace.

6. Some reasons for the decline in speed of learning by elderly people are: less acute vision, less acute hearing, slower reaction time, greater reluctance to learn, and increased fear of failure.

The adults in your business management course will help each other learn if you give them a chance.

1. Every person brings something different to the group.

2. Sharing their skills and know-how builds the self-confidence of adults in their ability to learn.

3. Adults in business management courses can help each other by: explaining why they follow certain management practices, playing host to the class during visits to their business, participating in various kinds of discussions, giving special reports, making resource persons available to the class, and many other ways.

4. When class members run the show, the classroom atmosphere becomes more friendly, less formal, and less restrained.

5. The main thing adults contribute is their extensive experience with both people and business.

Understanding the "needs" of your adult learners is a must.

1. What is meant by the term "needs?"
   a. Maslow (6) sets forth five levels of need arrayed in the order of their likely emergence including: biological, safety, love, esteem, and self actualization (fulfilling one's potential).
   b. The satisfaction of one level of need sets up conditions in which higher-level needs may emerge.
   c. A second interpretation of need is based on the assumption that human well-being depends on keeping a balance between internal forces produced by energy (food intake) and external conditions produced by environment (7).
   d. To keep the human system in equilibrium with external forces, certain needs must be met.
   e. A need, then, represents an imbalance or gap between the present situation or state of being (what is) and a goal (what should be).
   f. A need can be expressed in terms of a gap in a person's understanding, attitude, or skill.
   g. It can be interpreted as desired economic, social, or environmental changes or by practices to be followed.
2. What are felt needs?
   a. A felt need exists when the individual recognizes the gap between her or his present situation and a goal.
   b. The teacher of adults can expect this individual to be aware of the need and to be motivated to tackle the problems that must be solved to fulfill the need.
   c. For example, an individual who realizes that her or his small retail business has a lower-than-average sales volume is quite likely to be highly motivated to learn the specific skills and knowledges essential to bring about a change.
3. What are unfelt needs?
   a. An unfelt need exists when someone other than the individual sees the gap between situation and what should be, even though the individual does not.
   b. The teacher of adults cannot expect this individual to be interested in solving the problems that must be solved to fulfill unfelt needs.
   c. For example, a farmer who does not keep milk production records or who is unaware of appropriate standards for milk production is unlikely to feel a need for increasing milk production.
4. How can unfelt needs be converted to felt needs? By helping an individual to:
   a. Recognize her or his present situation,
   b. Develop appropriate goals, and
   c. Become aware of the gap between the two and of the problems that must be solved to close the gap.
5. What are instructional needs?
   a. In those cases where the individual already possesses the prerequisite skills, understandings, attitudes, and knowledge, she or he can go ahead and fulfill these felt needs without the aid of an instructor.
   b. On the other hand, if the individual must develop the prerequisite abilities necessary for the solution of problems and the fulfillment of needs, she or he has a need for instruction.
   c. Instructional needs, then, are the skills, understandings, attitudes, and knowledge that the teacher can help an individual to acquire in order to fulfill these needs.

As the teacher, you are the key to an effective program (8).

1. You must like adults and enjoy working with them.
2. You must know your subject matter.
3. You must be emotionally and intellectually committed to your adult class.
4. You must be willing to learn.
5. You must be enthusiastic.

Now go back to page 4. Try to answer the questions under *I. Fundamentals*. Look up the answers if you need to. Or write out the answers on a sheet of paper. Some people find that helpful. But don't leave this section until you've mastered the basics.

II. IMPLEMENTING THE BUSINESS MANAGEMENT MODEL

This section of the bulletin will tell you how to organize and conduct an adult education course concerned mainly with teaching people how to make management decisions and solve problems. We will deal with certain tasks in the order that you are likely to encounter them. Watch for the answers to the following questions. What administrative arrangements must you make in advance of your course? What's the best way for you to recruit class mem-

bers? How can you use the "figure it out with them" technique to plan your instructional program? What sort of teaching plans are most useful for teaching adults how to make decisions? What teaching tools are most effective for problem solving? How do you give instruction on the job? What guidelines will be vital to advising an association if your adults choose to take advantage of this optional feature of the business management model?

A. Making Advance Arrangements

You can rely on the Director of Adult Education to make certain routine administrative arrangements.

The director normally:

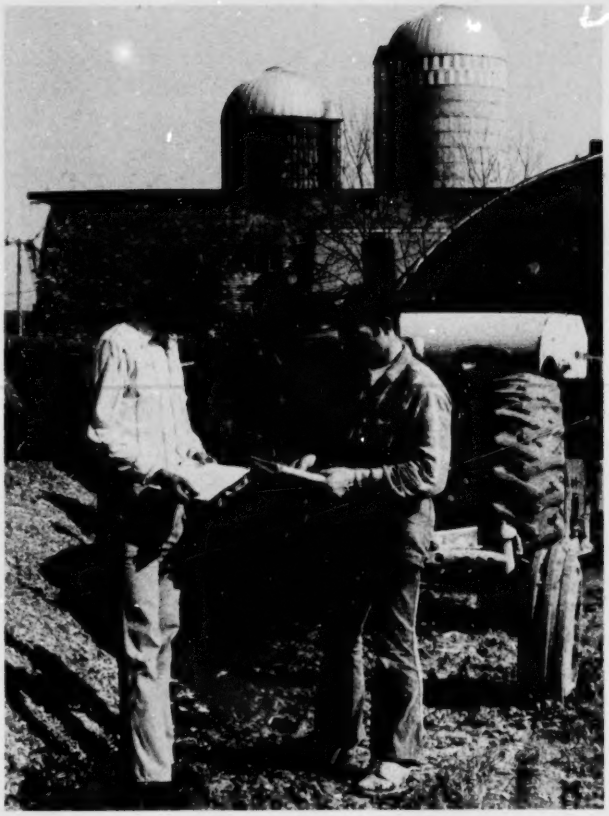
1. Takes charge of overall coordination of the adult education program with various community agencies and organizations.
2. Assesses the degree of community interest in various programs.
3. Gathers the program suggestions of appropriate advisory groups.
4. Obtains administrative permission for the various programs to operate.
5. Submits budget proposals for the adult education program through administrative channels.
6. Obtains approval of a tuition rate structure.
7. Submits your name for appointment as the course instructor.

You will need to work closely with the Director of Adult Education in making certain other administrative arrangements for your course.

1. Clearing your teacher certification.
2. Developing a brief course description.
3. Learning about budgetary constraints placed on the operation of the course.
4. Understanding the business procedures to be employed in budget disbursements.
5. Establishing the number of hours of instruction to be offered.
6. Setting the schedule of classes.
7. Making arrangements for use of classroom and other school facilities.
8. Establishing tuition to be charged for the course.

Recruitment procedures for business management courses rely heavily on personal contacts.

1. Wide acquaintance with local owner-operators and managers in your area of subject matter specialization is a precondition for organizing a business management course.



Personal contacts are a must in recruiting members for a business management course.

2. The business people you already know can give you information about other likely prospects, that is, names, addresses, types of businesses, ownership status, and degree of interest they are likely to have in the course.
3. Make appointments in advance if that is the usual procedure in your field of specialization.
4. Contact each prospective enrollee at her or his place of business unless a different location is suggested.
5. After arriving at the prospective enrollee's place of business and locating her or him, introduce yourself and explain your purpose in coming and how you plan to develop your course. Find out about the prospective enrollee's future plans and interest in your course, and confirm the information you already have concerning her or him. At the end of your short visit (15 minutes if possible) ask if she or he knows of any other potential enrollees, and tell her or him what to expect from you next.

Demonstrate tact and sensitivity to the business environment during recruiting and subsequent visits to

her or his place of business.

1. Visit at a time agreeable to the client.
2. Be efficient. Get in, make your point, and leave.
3. Interfere as little as possible with the business operation.
4. Limit discussion with the client to her or his free moments. Be tolerant of delays.
5. Express appreciation.

Use the mass media service of the Director of Adult Education for making public announcements of the course.

1. The Director of Adult Education coordinates all releases to the general public carrying information about the program.
2. Printed brochures describing the several program offerings are circulated widely in the community.
3. Newspapers and radio stations are used to fill "slow enrollment" courses.
4. Mass media releases feature such information as:
   - Course titles and descriptions.
   - Locations at which courses will be taught.
   - Dates and hours.
   - Tuition and other requirements.
   - Instructions for registration.

B. Determining Needs and Planning the Instructional Program

Getting a clear picture of the instructional needs of adult learners in the subject matter area of your course is always an important prerequisite to program planning. But in the case of problem solving it's an absolute essential. The instructional needs of adults engaged in management ventures are always complex. And adults frequently lack depth of insight concerning their own needs. If you ask them in group meetings what their needs are you'll get only part of the picture—and the part you get may be superficial. Even when they are aware of them, most adults aren't about to confess their shortcomings publicly to outsiders—especially where pride and personal issues are involved. And management needs fall in that category. Likewise, you, as the teacher, have no way of knowing what the needs of the owner-operators in your class are until you become well informed about each one's situation and goals. You simply cannot tell them what their needs are off the top of your head. That's why the "figure it out with them" approach is such a powerful tool for determining needs and planning instructional programs for business management courses.

Basically, you and the business management enrollee need to figure out answers to four questions: (1) What are the strengths and weaknesses of the business? (2) What management practices are presently followed? (3) What goals have been established and what improvements or new practices are already planned? And in view of all this, (4) What can you do in the business management course that will help this owner-operator most?

One way you and the adult learner can answer such questions is by taking a survey of the business. We hope you'll find the suggestions that follow helpful in getting you started on this vital venture.

Construct a survey form that will help pinpoint the strengths and weaknesses of the business.

What you need is a system that allows you to compare a given business with similar businesses on the basis of factors known to be important to success. As a specialist in your particular subject-matter field you may know of, or be able to locate, survey forms that others have used for this purpose. If not, you may have to use your creative talent to develop one. The ideas that follow may help:

1. Define success in this particular type of business or management endeavor. In most small businesses success is defined as profit measured by labor income. However, in an area such as home management, success may be defined in a completely different way. If you have trouble defining success in

Business analysis is used to identify the instructional needs of the learners.

your particular type of activity, seek the help of knowledgeable persons.

2. Success is usually the result of many factors. Review studies and textbooks in your subject-matter field to locate those factors that are both relevant and within the control of the owner-operator. For example, in farm business management you would include size of business, production rates of crops and animals, labor efficiency, selection of enterprises, and capital efficiency.

3. Select one or more appropriate yardsticks or criterion measures for each success factor. In the case of the success factors identified above, we would come up with such yardsticks as these:

Size of business:

- number of cows
- pounds of milk sold
- total work units
- man equivalent
- number of hens
- dozens of eggs sold

Production rates of crops and animals:

- tons of hay per acre
- tons of corn silage
- bushels of corn
- bushels of oats
- bushels of wheat
- pounds of milk sold per cow
- eggs sold per hen

Labor efficiency:

- work units per worker
- cows per worker
- pounds of milk sold per worker
- hens per worker
- dozen of eggs sold per worker

Selection of enterprises:

- available local markets
- adaptation to soil conditions
- adaptation to climate

Capital efficiency:

- investment per cow
- investment per hen

4. Eliminate those success factors that do not lend themselves to measurement by a "visitor to the business" under field conditions. For example, it is not feasible on short acquaintance with a farmer to collect the information necessary for computing investment per cow or per hen—thus we would eliminate capital efficiency from our list. Likewise, we would remove selection of enterprises since the yardsticks for measurement would require information that would be difficult or impossible to collect during a farm visit.

5. Provide space and formulas on the survey form for necessary calculations. For example in computing man equivalent as a yardstick of size of business a formula like the following one should be provided on the survey form:

Workers	*Full-time months*
Operator(s)	
Family (paid)	
Family (unpaid)	
Hired person	
Other	
Total	

Man equivalent (Total ÷ 12)

6. Make some provision for comparing the current status with norms, previous status, or previously established goals. In the case of the Farm Business Chart this is done by plotting current status on a decile scale composed of data drawn from a large number of similar businesses (figure 3).

Figure 3.

FARM BUSINESS CHART

FARM OF _____ YEAR _____

TOTAL ACRES IN THE FARM _____ ACRES OF TILLABLE LAND _____

Success in farming is the result of many factors. Farm business studies show that the most important factors under the farmer's control are size of business, production rates of crops and animals, labor efficiency and selection of enterprises.

The chart below shows the range of the experience of commercial farmers in New York with respect to size of business, production rates and labor efficiency.

The figure at the top of each column is the median of the highest ten per cent of the farms in that factor. For example, the figure 3.8 at the top of the column headed "Tons of Hay" is the median of the ten per cent of the farms with the highest yield of hay. The other figures in the column are the medians for "the next best 10 per cent," "the 10 per cent below that," and so forth. The figure 1.2 at the bottom of the column is the median of the ten per cent of the farms with the lowest yield of hay.

Each of the columns is independent of the others. The figure 22 at the top of the column headed "Tons of Corn Silage" is the median of the ten per cent of the farms with the highest yield of corn silage.

Hay, Silage, Grain Yields per Acre					Vegetable Yields per Acre						Fruit Yields per Acre			
Tons of Hay	Tons of Corn Silage	Bu. of Corn	Bu. of Oats	Bu. of Wheat	Lbs. of Dry Beans	Cwt. of Potatoes	Tons of Cabbage	Cwt. of Onions	Tons of Sweet Corn (Proc.)	Tons of Snap Beans	Bu. of Apples	Bu. of Pears	Tons of Grapes	Tons of Tart Cherries
3.8	22	125	95	58	2,300	340	33	470	7.5	3.0	550	330	7.5	6.6
3.0	19	105	83	52	1,900	305	28	410	6.6	2.7	490	260	6.0	5.1
2.7	17	95	73	47	1,700	285	25	370	5.9	2.5	440	230	5.5	4.1
2.4	16	88	67	44	1,500	265	22	345	5.5	2.3	400	200	5.0	3.5
2.2	15	82	62	41	1,300	250	20	320	5.2	2.1	365	180	4.6	3.1
2.1	14	78	58	39	1,100	240	18	300	5.0	2.0	335	160	4.2	2.8
1.9	13	70	54	37	1,000	225	16	280	4.7	1.9	305	140	3.8	2.5
1.7	12	60	50	34	900	205	14	250	4.2	1.7	270	120	3.4	2.1
1.5	11	50	45	30	800	185	12	220	3.6	1.5	230	100	3.0	1.7
1.2	8	35	35	25	600	150	10	170	3.0	1.3	190	70	2.5	1.3

Dairy Farms					Labor			Poultry Farms				
Number of Cows	Pounds of Milk Sold	Pounds Milk Sold per Cow	Cows per Man	Pounds of Milk Sold per Man	Total Work Units	Man Equivalent	Work Units per Man	Number of Hens	Eggs Sold per Hen	Hens per Man	Dozens of Eggs Sold per Man	Pounds Feed per Dozen Eggs
100	1,100,000	15,000	40	515,000	1,000	3.5	420	75,000	250	12,000	245,000	3.8
65	700,000	12,900	34	385,000	720	2.7	340	35,000	240	9,500	180,000	4.1
52	560,000	11,800	30	325,000	590	2.3	310	25,000	235	7,500	130,000	4.4
43	470,000	11,100	26	280,000	520	2.0	290	18,000	230	6,000	105,000	4.5
40	415,000	10,400	24	245,000	460	1.8	270	12,000	225	5,000	90,000	4.6
37	365,000	9,800	22	220,000	430	1.6	250	9,500	220	4,000	80,000	4.7
33	325,000	9,200	21	200,000	390	1.4	230	7,000	215	3,500	70,000	4.8
29	275,000	8,400	20	185,000	350	1.3	210	5,200	210	3,000	60,000	5.0
25	220,000	7,600	18	170,000	310	1.2	190	4,000	205	2,500	50,000	5.2
20	160,000	6,500	15	130,000	250	1.0	160	3,000	195	2,000	40,000	5.6

HOW TO USE THIS CHART

Draw lines in each column to show the rank of the farm business being studied. For example, if the farm produced 57 bushels of oats per acre draw a line in the "oats" column between the 54 and 58.

Draw heavy lines so that you can see them easily.

Do not draw lines for factors which are of only minor importance on the farm being studied.

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Figure 3. Continued.

WORK UNITS FOR LIVESTOCK AND CROPS

LIVESTOCK	Number or acres on this farm		Work units per head or per acre		Total work units
Dairy Cows	_____	×	7	=	_____
Beef Cows	_____	×	2	=	_____
Heifers	_____	×	2	=	_____
Hens (production only)	_____	×	0.04	=	_____
Egg processing (per doz.)	_____	×	0.002	=	_____
Pullets raised	_____	×	0.004	=	_____
Broilers raised	_____	×	0.003	=	_____
Brood sows	_____	×	3	=	_____
Hogs raised	_____	×	0.15	=	_____
Ewes	_____	×	0.5	=	_____
_____	_____	×	_____	=	_____

MAN EQUIVALENT

Workers	Full-Time Months
Operator(s)	_____
Family (paid)	_____
Family (unpaid)	_____
Hired men	_____
Other	_____
Total	_____
Man equivalent (Total ÷ 12)	

CROPS						Yield per acre	Total Crop	
Hay	_____	×	0.6	=	_____	_____	_____	tons
_____	_____	×	_____	=	_____	_____	_____	tons
Corn Silage	_____	×	0.8	=	_____	_____	_____	tons
Corn for grain	_____	×	0.6	=	_____	_____	_____	bu.
Oats	_____	×	0.6	=	_____	_____	_____	bu.
Wheat	_____	×	0.6	=	_____	_____	_____	bu.
_____	_____	×	_____	=	_____	_____	_____	
_____	_____	×	_____	=	_____	_____	_____	
Dry beans	_____	×	1.5	=	_____	_____	_____	lbs.
Potatoes	_____	×	6	=	_____	_____	_____	cwt.
Cabbage	_____	×	9	=	_____	_____	_____	tons
Snap beans for processing	_____	×	1	=	_____	_____	_____	tons
Onions	_____	×	12	=	_____	_____	_____	cwt.
_____	_____	×	_____	=	_____	_____	_____	
_____	_____	×	_____	=	_____	_____	_____	
_____	_____	×	_____	=	_____	_____	_____	
_____	_____	×	_____	=	_____	_____	_____	
Apples–growing	_____	×	4	=	_____	_____	_____	bu.
Apples–harvest–per bushel	_____	×	0.02	=	_____			

OTHER					
Work off farm, days	_____	×	1	=	_____
Marketing	_____	×	_____	=	_____
_____	_____	×	_____	=	_____

TOTAL WORK UNITS

WORK UNITS PER MAN

(Total work units ÷ man equivalent)

Total pounds of milk sold	_____	÷	no. of cows	=	_____ pounds of milk sold per cow
Total pounds of milk sold	_____	÷	man equivalent	=	_____ pounds of milk sold per man
Number of cows	_____	÷	man equivalent	=	_____ cows per man
Total dozens of eggs sold	_____	÷	no. of hens	=	_____ dozens of eggs sold per hen
			Dozens of eggs per hen × 12	=	_____ eggs sold per hen
Number of hens	_____	÷	man equivalent	=	_____ hens per man
Total dozens of eggs sold	_____	÷	man equivalent	=	_____ doz. of eggs sold per man
Total lbs. of feed for laying flock	_____	÷	doz. of eggs sold	=	_____ lbs. of feed per doz. eggs

Construct a second survey form that will allow you to collect data on the management practices presently followed.

1. In almost every type of business (or enterprise) certain practices are known to affect success.
2. Information concerning these practices often explains why the business is weak on certain factors. For example, when you learn that a dairy farmer ignores the practice of feeding cows according to production you have a strong clue as to why his or her business is weak on "pounds of milk per cow" (figure 4).

Figure 4. Farm survey form

Personal

Name .....

Mailing Address ..... Zip .....

Date of Birth ..... Highest Grade Completed .....

Farming Status ..... Marital Status ..... Number of Children .....

Farm

Completed New York Farm Business Chart (circle one) Yes No

Check (√) practices followed in list below:

Dairy

.... Production record program (DHIA, OS, other).
.... Breeding records (breeding, calving, heat expectancy).
.... Herd health records.
.... Cows observed twice a day for heat symptoms (20 min. each time).
.... Cows bred, first heat period, 50 days after calving.
.... Artificial insemination (high AI proven sires).
.... Veterinarian examines cows for pregnancy.
.... Heifers proper size for age of calving (22-26 months of age).
.... All cows have 40-60 day dry period.
.... Calving pen used.
.... Treat all cows for mastitis with antibiotics at beginning of dry period.
.... Isolate purchased cows 30 days.
.... Annual herd turnover below 25 percent.
.... Feed colostrum to calves.
.... Grain fed according to production and kind and quality of forage.
.... Wash udder and stimulate let-down ½ to 1 minute before applying milker.
.... Dip teats in suitable disinfectant after milking.
.... Adequate ventilation.
.... Barn laid out for "easy work."
.... Stalls at least 43" wide and 64" long.

Crops

.... Planned crop rotation.
.... Contour strip cropping on soils likely to wash.
.... Row crops on land with slight slope.
.... Sod crops on land with greater slope.
.... Critical spots artificially drained.
.... Cooperates in SCS program.
.... Tests soil.
.... Uses indicated fertilizer analysis and placement.
.... Limes according to recommendations.
.... Uses band seeding.
.... Applies lime and fertilizer on permanent pasture.
.... Rotates pastures with "big bite" species.
.... Clips permanent pasture.
.... Finishes first cutting of hay by June 25.
.... Observes six-week harvesting interval for legumes and grasses.
.... High percent of hay crop stored as silage.
.... Studies success of new hybrid corn varieties in neighborhood.
.... Adapted high producing corn hybrid.
.... Uses silage variety with high grain content.
.... Controls for Northern Corn Root Worm.
.... Starts harvest of silage corn in glazed stage.
.... Treats corn and small grain seed with insecticide and fungicide.

Can identify:
.... Common weeds.
.... Damaging insects.
.... Crop diseases.

Figure 4. Continued

Farm business management

.... Maintain a farm office with files and reference materials.
.... Set aside a minimum of 10 percent of time for management.
.... Have a map of home farm showing soil types in each field.
.... Take an annual inventory.
.... Keep cash account records.
.... Keep a record of all real estate capital improvements.
.... Keep wage and hour records on hired help.
.... Keep a field and crop record.
.... Prepare an annual financial statement.
.... Analyze and study farm records each year.
.... Keep informed on farm prices and farming outlook.
.... Budget alternatives when making major decisions.
.... Have an inventory of "Your Valuable Papers."
.... Have plans for retirement and transfer of business.
.... Written partnership or other business agreements.
.... Make a will to cover farm and personal matters.
.... Review debt situation annually and keep debts consolidated.
.... Pay all major bills by check.
.... Review insurance program at least every three years.
.... File tax returns, check stubs, and other important records.

Machinery and buildings

.... PTOs protected.
.... Machines stored under cover.
.... Machines properly winterized.
.... Home farm shop.
.... Fire extinguisher in barn.

Adjustment, lubrication, and maintenance of machinery (check instruction wanted)	Selecting and buying machinery (check instruction wanted)
.... Milking parlor equipment	....
.... Manure spreader	....
.... Diesel tractor	....
.... Gasoline tractor	....
.... Baler	....
.... Forage harvester	....
.... Mower	....
.... Hay conditioner	....
.... Elevator	....
.... Plows and harrows	....
.... Corn planter	....
.... Seeder	....
.... Sprayers	....
.... Farm wagons	....
.... Small gas engines	....
.... Electric motors	....
.... Water systems	....
.... Electrical systems	....
.... Use of arc welder	....
.... Use of oxy-acetylene welder	....

GOALS, FARM IMPROVEMENTS, NEW PRACTICES PLANNED

Dairy herd (or poultry flock) **Crops and land**

Buildings and machinery **Overall farm**

What can we do in the farm business management course that will help this farmer most?

Provide space on your survey form for recording goals and the problems that the adult enrollee and the teacher agree will be emphasized in the adult education course.

1. Some adult learners have specific written goals. Others will think of goals as improvements to be made in the business or new practices.

2. In farm business management we have found it useful to summarize the problems that the adult enrollee and the teacher agree will be dealt with in the course under the heading of "What can we do in the program that will help this farmer most?" In any event, avoid terms that would sound complex, confusing, or artificial to the enrollee (figure 4).

Take a survey of the businesses of the prospective enrollees to get a first impression of their instructional needs.

1. Make advance arrangements with the owner-operator so that she or he will be free from other duties and responsibilities. Up to two hours is usually needed.

2. Follow these procedures in taking a business survey:

- Explain the purpose of the survey, that is, "to find out what we can do in the business management course that will help you the most."
- Let the owner-operator show you the business. Ask questions about her or his situation, plans, and problems.
- Find a location free from distractions and fill out the survey forms.

- Collect data on size of business, labor efficiency, production rates, capital efficiency, accident or disease rate, and production practices followed.
- List the projected goals, improvements, and new practices planned by the owner-operator.
- Summarize the survey by making a list of the problems the owner-operator would like to see solved during the course.

3. Summarize the results of the business surveys taken:

- List the problems identified at each business on a frequency chart (figure 5).
- Differentiate between felt needs and unfelt needs.
- Expect considerable diversity to show up in the instructional needs of the owner-operators.

4. Select five or six major problems indicated by the survey to be common among the group.

- The problems selected will be more useful if they are screened to a size that can be dealt with in from one to three instructional sessions.
- Give top priority to business management problems which fall in the felt needs category.

Figure 5. Problem summary sheet.

Farm Problems	Class Members										Total

Use a "figure it out with them" technique in planning instructional programs for business management courses.

1. Plan the instructional program for your business management course with the enrollees at the first class meeting.

2. Remind the class of the surveys previously made with each of them, describe the process used for summarizing the results, and present the list of five or six major problems.

3. Encourage the group to add to and delete from this list. Guide the group in deciding which problems will be emphasized in the course.

4. With the help of the group, schedule specific dates for each problem, taking into consideration such factors as logical sequence, seasonality, the number of meetings needed to solve each problem, and the urgency of each.

5. Provide for individual or small group instruction as needed.

6. Encourage informality by: your dress, round-table seating arrangements, use of first names, encouragement of enrollee participation, and by providing light refreshments during the meeting.

7. Create a learner-centered atmosphere by being a good listener, encouraging everyone to participate, expressing a desire to take class members into partnership as teachers, and fostering a "one for all and all for one" spirit among the group.

8. Place the tentative program in the hands of class members before the second meeting.

C. Planning for Teaching Managerial Units of Instruction

State the TITLE of your unit in concise understandable terms that are meaningful to the learners.

1. Word the title so that it accurately describes what you plan to teach. If you plan to give instruction in only part of a complex subject matter area, you may restrict the title; for example, "Selecting and Purchasing Home Appliances" might become "Selecting and Purchasing a Dishwasher."

2. Frequently, the problems identified by business people are just too big and complex for instructional purposes; for example, "Planning an Insurance Program" might be broken into "Buying Property Insurance," "Planning a Life Insurance Program," and "Insuring Motor Vehicles."

3. Use words that are commonly spoken and understood by your learners. Instead of "Controlling Brucellosis," use "Controlling Bang's Disease" for the single reason that more enrollees will know what you're talking about.

4. Personalize the title of the unit if that will give a more accurate picture of what you plan to do. If, for example, you plan to teach the selection and purchasing of a dishwasher by having your home management class decide what machine the Wilson's should buy, you might want to use a title such as "Selecting and Purchasing the Wilson's Dishwasher."

Orient yourself to the important aspects of the SITUATION in which you will be teaching.

1. Take a minute to think about yourself in relation to the problem to be solved. Get your bearings with respect to such issues as:
   - What will this problem include? Where will it start? Where will it end?
   - What do you know about the problem already?
   - What will you need to learn in order to teach it? Where can you find out what you need to know? To whom can you turn for help?

2. Now take a minute to think about your learners and their characteristics:
   - What do they already know?
   - What abilities do they already have?
   - What is their attitude likely to be toward this subject? Will it be inherently interesting to them?
   - How does this problem relate to the motivations and lives of the learners?

3. Now turn your thoughts to the physical aspects of the situation in which you will teach?
   - Where will your teaching take place? Visualize your classroom, laboratory, shop, and other available facilities.
   - What instructional materials are available, for example, references, manuals, bulletins, audio-visual aids, resource units, models, tools, objects, crops, and animals.
   - What additional resources in the community might be used to supplement school resources? Are exemplary models available? How about consultants?
   - How much time do you have to teach the unit? How is this time scheduled and spaced?

4. Now try to picture yourself teaching this unit to your adults in your physical set-up using the resources available to you:
   - What teaching objectives must receive top priority?
   - What format will be most useful for analyzing your subject matter?
   - How will you motivate your students?
   - What models will you provide?
   - How will you guide initial decision making trials?
   - How will you manage practice effectively?
   - How will you provide for individual differences?
   - How will you provide for recall and help your students apply what they know to new situations?
   - How will you evaluate adult learning and provide feedback?

5. Don't write. Keep thinking until some of these issues fall in place and you can begin to picture yourself solving this problem with your group.

State your TEACHING OBJECTIVES in terms of the specific measurable attributes you hope to observe in your learners after you have taught (9).

1. Teaching objectives are the WHY of your teaching.
2. The advantages of clearly-stated objectives:
   - They provide you with a sound basis for deciding on the subject matter, materials of instruction, and the teaching procedures to be used.
   - They enable your adult learners to establish realistic goals of their own and evaluate their progress as instruction progresses.
   - They allow you to evaluate the learning of your students in terms of specific observable behaviors.
3. Your first step is to identify by name the observable terminal behavior that you will accept as evidence that the learner has achieved.
   - Use words with specific meanings to describe what the learner will be doing when she or he is succeeding. For managerial units such words usually refer to the end products of decision making, for example, select, decide, purchase, determine, choose, make a decision.
   - Avoid words that are not definitive or denote actions that can be interpreted in different ways, for example, know, understand, appreciate, enjoy, believe, grasp the significance of.
   - Now let's look at some examples in the context of a managerial unit of instruction:

If the title of your unit is, "Selecting and Purchasing the Wilson's Dishwasher," *Then you might start your teaching objectives with such statements as:*

1. The learner will *select the model of dishwasher.*
2. The learner will *select the type of dishwasher.*

3. The learner will decide *where to purchase the dishwasher.*

4. Secondly, further define the desired behavior by describing the important conditions under which the behavior will be expected to occur. In deciding on the conditions to be imposed on the learner, ask yourself three questions: What will the learner be provided? What will the learner be denied? What are the conditions under which the behavior will occur?

Some examples of how to state conditions follow:

Given necessary information concerning
Given a diagrammatic sketch of
Given the requirements for
Without the aid of references
Without regard to
Keeping in mind George's long-range goals
Placing primary emphasis on cost per unit

- Now let's refocus our attention on our teaching objectives for our home management course:

Remember, our title was "Selecting and Purchasing the Wilson's Dishwasher." *Now with conditions added, our objectives will read:*

1. *Given the characteristics of portable and installed units,* the learner will select the model of dishwasher.
2. *Given detailed information concerning top and front loading units,* the learner will select the type of dishwasher.
3. *Given a knowledge of alternative sources,* the learner will decide where to buy the dishwasher.

5. Specify the criterion of (minimum) acceptable performance by describing how well the learner must perform to be considered acceptable:

- Minimum number as a criterion. Example: at the least cost per unit.
- Percent of proportion as a criterion. Example: within 25 percent of Cheryl's net income per month.
- Important characteristics of performance as a criterion. Example: which will cover the replacement cost of the business, that is, likely to meet her or his needs for the next five years.
- Now back to the Wilson's kitchen to complete our teaching objectives for the home management group.

Remember our title? "Selecting and Purchasing the Wilson's Dishwasher. *Now with the criterion of minimum acceptable performance added, our teaching objectives will read:*

1. Given the characteristics of portable and installed units, the learner will select the model of dishwasher *that best fits the Wilson's kitchen layout.*
2. Given detailed information concerning top and front loading units, the learner will select the type of dishwasher *that best fits the Wilson's kitchen layout.*
3. Given a knowledge of alternative sources, the learner will decide *where to buy the best dishwasher to fit the Wilson's circumstances.*

Make an ANALYSIS of the PROBLEM to be solved.

1. As with the other types of units, the analysis of a managerial unit provides a useful organization of the content or WHAT of your teaching.

2. In making a managerial analysis your main cues come from your teaching objectives, your knowledge of subject matter, and available technical references.

3. The teaching of business management courses involves teaching people how to make decisions and solve problems.

4. The managerial analysis is especially useful for organizing subject matter for this purpose.

- It provides a step-by-step procedure for guiding initial practice in decision making.
- It provides a systematic procedure that the learner can follow in solving the problem.

5. Making a managerial analysis involves three distinct and essential steps: breaking the overall problem into the decisions to be made, stating the logical alternative courses of action, and identifying the factors to be considered in weighing and choosing between the various alternatives. Now let's examine the rules for the successful negotiation of each step.

6. Breaking the overall problem into "decisions to be made."

Rule One: *List the critical aspects or central issues of the problem that the individual is free to decide and to manipulate in her or his situation.*

- Often the decidable issues will include some of the following:
  Which category (type, model, kind, breed, system) will be selected?
  When will a given action be timed?
  Where will it be done?
  Who will do it?
  How will it be done?
- Example: Assume that Business person A has the problem of "Planning a Life Insurance Program." In order to solve this problem she or he must decide, among other things:
  How much insurance will I need?
  What kind of insurance will I buy?

When will I buy?
Where will I buy it?

- Remember, list only the *central* issues that the individual is free to manipulate.

Rule Two: *State each decision to be made in question form.*

- The reason for this is very simple. When we place the decision to be made in question form it immediately alerts the learner to the fact that there is unfinished business—something to be decided; it provides the proper mental set for decision making.

Rule Three: *Avoid multiple decisions.*

- A multiple decision is a question involving more than one thing to be decided.
- Since each of these decisions involves weighing different alternatives in the light of a pertinent set of factors it is impossible to make more than one decision at a time.
- Example: The decision, "How will I feed my milking herd?" really must be dealt with as several decisions, including: "What kind of roughage will I feed my herd?" "How much roughage will I feed each cow?" "What percent protein concentrate will I feed?" "How much concentrate will I feed each cow?"

Rule Four: *Avoid restating the job title as a decision to be made.*

- The purpose of analyzing subject matter content is to break it into logical, manageable components and to rearrange it in the most useful form for teaching.
- When you restate the job title as a decision you have simply avoided what you set out to do. You have not come to grips with the task to be done.

Rule Five: *Avoid lethal decisions.*

- A lethal decision is a question with yes or no alternatives that may block further consideration of the problem.
- Example: "Will I buy life insurance?" as a decision in a unit on "Planning My Life Insurance Program."
- If you believe that a lethal question must be dealt with, do so in a separate unit of instruction since such questions invariably involve a number of related decisions.

Rule Six: *Restrict the number of decisions to four or five.*

- Seldom more than four or five critical issues are involved in a given problem.
- Teaching time is always too tightly scheduled to allow the pursuit of minor issues that will normally fall in place without prolonged consideration.

Rule Seven: *Test each decision by identifying the logical alternatives.*

- Whenever you encounter a question without apparent alternatives you must either reject it or reword it so that alternatives become evident.
- When you are unable to identify sensible alternatives, perhaps a decision is not required.

7. Stating the logical alternative courses of action open to the learner.

- This time let's look immediately at some examples. Let's examine the decisions we said a business person must make in planning life insurance. In each instance we will ask the question, "What are the business person's alternatives?"

Decisions to be made:	*Alternatives*
How much insurance will I need?	$10,000 $20,000 $30,000
What kind of insurance will I buy?	Term Straight Life Limited Payment Life Endowment
When will I buy?	1975 1980 1985 1990
Where will I buy it?	Company A Company B Company C

8. Identify the factors to be considered:

- Factors to be considered are the criteria or bases for deciding which alternative to choose.
- For example, in making the decision, "How much insurance will I buy?" we identified the alternatives by integrals of $10,000, $20,000, and $30,000. In making this decision such factors as the following will need to be considered in arriving at the amount needed by the family in event of the death of the breadwinner: burial expenses, basic living expenses of dependents, education of children, and so on.

- Only by weighing one alternative against another on these factors can one make an intelligent decision. So this gives us our next rule.

Rule Eight: *Select only those factors that provide a logical basis for choosing between alternatives.*

Rule Nine: *State each factor in as few words as possible.*

- Succinctness helps you to keep decision and factors separate in your mind.

Rule Ten: *Never state factors as questions.*

- This will only confuse you and serve no useful purpose in the end.

Rule Eleven: *Restrict the number of factors to four or five as a matter of practicality.*

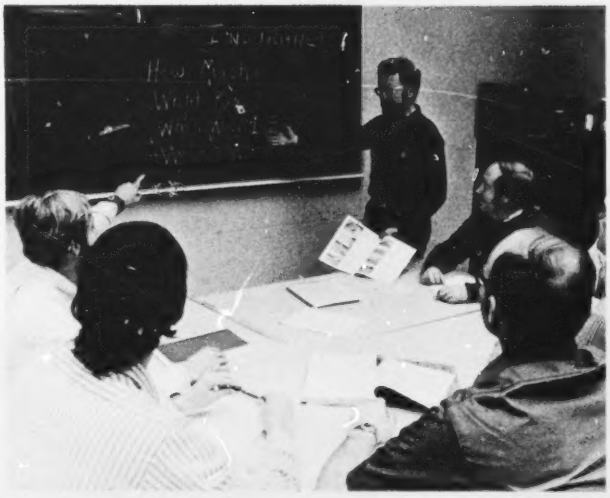
- Select only those factors for consideration that are critical in making each decision.

9. Now let's look at a complete managerial analysis. The one which follows relates to the home management course we talked about earlier and the unit on "Selecting and Purchasing the Wilson's Dishwasher" (10).

Decisions to be Made	*Alternatives*	*Factors to be Considered*
1. Which model will we select?	Portable Installed	1. Availability of floor space. 2. Availability of cabinet space. 3. Convenience. 4. Initial cost.
2. What type will we select?	Top-loading Front-loading	1. Available space above washer. 2. Counter space needs. 3. Personal preference.
3. Where will we purchase the dishwasher?	Dealer A Dealer B Dealer C	1. Quality of "washing." 2. Model decided on. 3. Type decided on. 4. Installation service. 5. Service available. 6. Cost.

Select the TEACHING PROCEDURES you will use in teaching your unit.

1. Teaching procedures are the WHO, WHERE, WHEN, and HOW of your teaching.



The instructional focus is on problem solving and making managerial decisions.

2. A great variety of teaching procedures are commonly used in teaching managerial units of instruction.

Teacher-centered techniques

Lecture	Problem-solving
Teacher explanation	Individual instruction
Team teaching	Demonstrations

Techniques for using community resources

Field trip
Resource persons
Learner collection of information

Group interaction techniques

Buzz session	Panel discussion
Brain storming	Role playing
Debate	Forum
General discussion	

Educational technology

Slides and film strips	Audio tape recorder
Sound motion pictures	Single-concept films
Overhead projector	

3. Secondly, let's examine the teaching tasks that are vital for teaching managerial units of instruction:

- Communicate teaching objectives to the class members.
- Maintain the motivation of the learners.
- Lead the class in analyzing the problem to be solved into decisions, alternatives, and factors.
- Provide for the collection of needed information concerning each factor to be considered.
- Lead the class in exploring the outcomes that can be expected if each alternative is pursued.

- Cause the learners to select the alternative they are willing to defend.
- Provide for individual differences.
- Evaluate student performance.
- Provide feedback on progress.
- Help students apply their new problem-solving ability in new situations.

4. Select the teaching tools that you believe will best enable you to carry out each of the teaching tasks you plan to perform. Some criteria for your consideration in doing this are:
   - Use teaching procedures known to be effective with adults, for example, problem-solving, use of educational technology, use of visual aids, field trips, resource persons.
   - Avoid procedures less popular with adults, for example, long lectures, audio-visual aids that are hard to see or hear, recitation, supervised study, written examinations.
   - Provide opportunities for class members to participate in giving instruction at a level consistent with their capabilities. Every class will have members who are capable of giving demonstrations, assisting with individual instruction, planning and conducting field trips and so on.
   - Use a variety of procedures.
   - Select teaching procedures that are workable in view of time available and the setting in which you will use them.
   - Above all, keep your eye on your teaching objectives and select procedures that will result in the kinds of behavior changes you have in mind for your learners.
5. Example: Now let's take a look at some teaching procedures that might be effective for teaching our unit on "Selecting and Purchasing the Wilson's Dishwasher."

Teaching Procedures

First Class Session

- Lead the class in analyzing the problem into decisions, alternatives, and factors.
- Inform class of teaching objectives for this unit.
- Inform class of arrangements made for field trip to be taken during next class session.
- Make a list of information to be collected on field trip and organize it into a field trip data sheet.

Second Class Session

- Field trip to the Wilson home to collect needed information about their kitchen.
- Field trip to three dealers to see the various models and types of dishwashers available and collect other needed information.

Third Class Session

- Discuss the information collected on field trip related to the first decision.
- Have class members decide the model of dishwasher they would recommend for the Wilson's and defend their decision during general discussion lead by the teacher.
- Repeat steps 1 and 2 above for each of the other decisions included in the analysis.
- Make appointments with class members who wish to have the teacher visit them to give individual assistance in deciding which dishwasher to select and purchase.

List the MATERIALS OF INSTRUCTION needed for each class session.

1. Such a list is useful as a reminder of the things you will need available for each teaching session.
2. Example: Now to conclude our teaching plan:

Teaching Materials

First Session

- Mimeo analysis for each class member
- Chalkboard

Second Session

- Field trip data sheet for each class member
- Measuring tape

Third Session

- Completed field trip data sheet
- Appointment book

D. Using Teaching Tools Effectively

You already have a good start on using teaching tools effectively. You are aware of the teaching tasks that are vital for teaching managerial units. And you know how to select appropriate teaching tools for performing each task. What you probably need now is to develop skill in using each teaching tool effectively.

To get you started we have developed a "Master Key to Adult Education Teaching Tools." Perhaps a few words about how we created it will help you understand what it is and how it can help you. See pages 25–31.

1. First we classified the teaching tools commonly used in teaching adults into six categories:
   - Group interaction techniques
   - Visual aids

- Education technology—sometimes called educational hardware
- Teacher-centered techniques
- Techniques for using community resources
- Shop or laboratory experiences

2. Next we made a list of teaching tasks that each teaching tool is well-suited for. Diagrams showing teaching and learning interactions should help you estimate the physical situation.

3. Then we wrote a brief description of how to go about using each tool properly. These descriptions aren't exhaustive. But they do give you the main steps to follow, and at the end of each description we cited the best references we know of for finding out more about each specific teaching tool.

4. And last of all we tied it all together by collecting all of the references cited in the "Master Key . . ." in a *Self-Help Kit for Adult Education.* If you missed where to send for this, look in the preface.

5. Our hope is that you will be courageous. Use the "Master Key . . ." to help you select and use appropriate teaching tools for performing each of your teaching tasks. Don't be afraid to experiment. Most of them are easy to use.

E. Giving Individual Instruction

Use individual instruction for specific purposes that are difficult to achieve by other means.

1. To assist enrollees in assessing their instructional needs.
2. To follow-up on group instruction by helping the learners apply problem-solving abilities to their own business situation.
3. To help enrollees solve problems that will not be dealt with in group instruction.

Make appointments for individual on-job instruction at least a week in advance.

1. For a specific hour.
2. On a specific day.
3. At a specific place.
4. For a specific purpose.

Prepare thoroughly for giving individual instruction.

1. Review your record of previous individual instruction visits.
2. Double-check to see if you have followed through on promises made.
3. Analyze the problem to be solved.
4. Determine the teaching procedures to be used.
5. Collect materials or equipment needed.
6. Study up on unfamiliar aspects of the problem.
7. Dress appropriately for the teaching procedures planned.

Use businesslike procedures in giving individual instruction.

1. Reestablish the purpose of the visit or conference.
2. Preview your plans with the learner.
3. Find a location free from distractions and get to work.
4. Maintain a friendly but businesslike attitude toward the learner.
5. Congratulate the learner on progress and accomplishments.
6. Watch for and record new instructional needs.
7. Make an appointment for next visit or conference if one is needed.

Keep a record of individual instruction.
Such records might include:

1. Date.

On-job instruction is a potent feature of the business management model.

2. Name of enrollee.
3. Hours of instruction given.
4. Miles travelled.
5. Purpose of instruction.
6. Progress made.
7. New instructional needs discovered.
8. Promises made.
9. Purpose, date, hour, place of next visit or conference.

F. Organizing and Advising a Local Young Farmer Association

Be sure to consider the advantages of having a local association if you are teaching a farm business management course for young farmers.

1. A local young farmer association is an organization of, by, and for young farmers who have joined together to pursue common interests.

2. Young farmers often share such common interests as improving their farming operations, improving their homes, gaining experience in cooperative effort and community service, developing leadership, and finding satisfying recreational opportunities and social outlets.

3. Sometimes young farmers can better find opportunities to meet their needs in an organization of their own than in other available organizations.

4. This is true because older adults are often reluctant to relinquish leadership responsibilities and policy determination to the younger generation.

5. Young farmer associations offer several advantages:

- The group gains a sense of identity.
- The young farmers share responsibility for the success of the program with the teacher.
- The young farmers obtain leadership experiences.
- An active association has a favorable effect on attendance for group instruction.
- The young farmers may obtain experience in cooperative and community service activities that are difficult to provide in a program devoted solely to instruction.
- The social and recreational activities of the group help in keeping interest high.
- New members are more easily attracted.

Applies primarily to farm business management courses for young farmers.

Use procedures for getting the association started that have worked for other teachers.

1. Obtain administrative approval before presenting the idea to the young farmers.

2. Discuss the idea of forming a young farmer association with each young farmer during individual on-farm instruction. Conduct a general discussion of the idea over coffee following a young farmer class.

3. Win the interest of the natural leaders within the class and let them carry the ball. Provide opportunity for the leaders to sell the idea to the young farmers during a regular class session.

4. Have a delegation of young farmers attend a meeting of another local young farmer association and bring back the word.

5. Invite the president of a nearby young farmer association to appear before the young farmer group to explain their organization.

6. Discuss what such an organization would do if formed and develop a list of activities that would be of interest to the young farmers.

7. If the young farmers decide to form an association, a first step might be the election of temporary officers.

8. A second step might be the development of a brief informal constitution. Acting as a committee of the whole, the group should discuss and agree on the name, purposes, membership, officers and their duties, conduct of meetings, and provisions for amendment.

9. Once the group agrees on its major provisions the constitution can be turned over to a committee that will develop a brief written document for adoption.

One of the keys to an active and successful young farmer association lies in the planning and carrying out of an annual program of activities by your group.

1. Every member participates in its formulation.

2. Every member has a responsible part in carrying it out.

3. The program of activities represents the true interests and desires of the young farmer.

4. The activities are related to:
   - Cooperative effort.
   - Community service.
   - Improving the home.
   - Recreation and social gatherings.

5. Committees have charge of each activity planned.

The members of the young farmer association can insure its success by developing these "hallmarks" of an active organization:

1. You must restrain any tendency you may have to run the organization.

2. On the other hand, it is your obligation to see to it that the organization and its activities bring credit to the school.

3. The elected officers and the group members are the leaders of the young farmer association.

4. Your role as advisor includes:

- Providing leadership training.
- Assisting the officers in carrying out their duties.
- Consulting with committees who request assistance.
- Assisting the officers in developing good public relations.
- Maintaining liaison with school authorities.
- Exerting an enthusiastic influence.

III. EVALUATING THE BUSINESS MANAGEMENT COURSE

After your business management course is over, you'll naturally be curious to learn whether or not your hard work "paid off" for your learners. The best way for you to find this out is to conduct a "result-centered" evaluation. In this section we'll give you some guidelines and procedures for doing just that. And since you may need to develop some forms for collecting data, we will end this section with an example from farm business management.

You will find the "result-centered" approach a natural for evaluating your business management course.

1. The result-centered approach to evaluation seeks answers to three main questions:

- What is the purpose of the program?
- How well has that purpose been achieved?
- What instructional needs remain?

2. The result-centered approach to evaluation rests on at least four assumptions:

- The instructional needs of the learners have been accurately assessed by the teacher and the learners.
- Planning for the course has been sharply focused on the instructional needs of the learners related to the central issues of business management.
- Teaching has concentrated on the solution of business management problems faced by the learners.
- The real payoff in education lies in the results as evidenced in the lives, and in this case, businesses, of the enrollees.

3. This approach to evaluation has several advantages:

- It provides an assessment of the learners' progress toward establishment in business.
- It gives a reappraisal of the instructional needs of the learners which is of value in planning the next stage of the ongoing program.
- It is easy to understand, that is: What did we set out to do? What did we achieve? What is left to do?

Follow these steps in evaluating your business management course.

1. State the purpose of the course, for example, to assist the young farmers enrolled in becoming established in farming.

2. Define the purpose operationally by listing its measurable components or subdivisions, for example, financial progress, proficiency and experience in making management decisions, proportion of income from farming.

3. Select appropriate "yardsticks" or criterion measures for each component or subdivision of the purpose, for example, increase in net worth to measure financial progress.

4. Collect data concerning the present status of each enrollee by measuring her or his business with each yardstick selected, for example, determine the current net worth of each enrollee.

5. Compare current status on each criterion measure (yardstick) with status at the beginning of the course, norms for similar businesses, and (or) with previously established learner goals.

6. Review with each enrollee her or his progress toward establishment, help set new goals for the coming year and develop a list of instructional needs.

7. Summarize the data obtained in 4 and 5 above, protecting the identity of individuals.

8. Present the findings at a group meeting and lead a discussion of suggestions for improving next year's course.

9. Lead the group in using the information discovered about instructional needs to plan next year's instructional program.

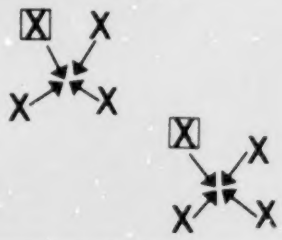
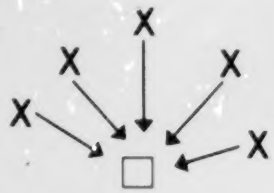
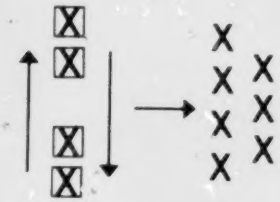
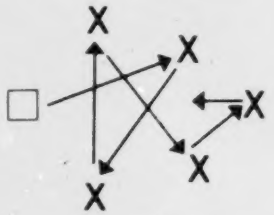
10. Example: Figure 6, Evaluation of progress toward establishment in farming, demonstrates one application of these ideas. We hope it will be helpful to you in developing your own forms for collecting data and evaluating your business management course.

Figure 6. Progress toward establishment in farming.

Components of Establishment in Farming	Measures for Each Component	Sources of Data	This Year's Goal	Status		
				This Year	Last Year	Comparison Group
1. Financial progress	Total capital investment in farm business.	Inventory				
	Percent of business resources controlled.	Inventory				
	Trend in labor income.	Cash Account Book				
	Increase in net worth.	Personal inventory				
2. Proficiency and experience in performing skills and making management decisions.	Proportion of major decisions made by young farmer	Interview with young farmer Farm Business Chart				
	Size of business Number of cows Pounds of milk sold Man equivalent Number of hens Total tillable acres Total P.M.W.U.	↓				
	Labor efficiency Cows per man Work units per man Pounds milk sold per man Hens per man	↓				
	Crop yields Tons of hay per acre Tons of silage per acre Bushels of oats per acre, etc.	↓				
	Animal production Pounds of milk per cow Dozens of eggs per hen	↓				
3. Proportion of income from farming	Percent of income	Interview with young farmer				
4. Establishment in the community	Tenure standing in farming	Interview with young farmer				
	Attitude toward farming	↓				
	Farm experience since age 15	↓				
	Educational program participation	↓				
	Officer participation in organizations	↓				
	Attitude of wife (partner or parent) toward farming	↓				
	Agricultural agency participation	↓				
	Community residence in years	↓				
	Age of farmer	↓				
	Leadership self-confidence rating	↓				

Table 1. Master key to adult education teaching tools

A. Group interaction techniques

Teaching tools	*Teaching tasks well-suited for*	*How to go about it*
Buzz session 	Maintain motivation. Provide for individual differences.	Divide into small groups (about 5 or 6). Sit around tables. Appoint discussion leader and reporter for each group. Explain the topic. Discuss for under 15 minutes. Pull groups together. Get report from each group. End with general discussion. (11, 12)
Brainstorming 	Provide for individual differences.	Problem is sighted. Group members express ideas on the subject. All ideas are accepted and recorded. Recorded ideas are then considered and discussed. (11, 12)
Debate 	Maintain motivation. Help individuals apply knowledge and skills in new situations.	Select the issue of debate. Prepare room. Divide the group into those pro and con. Select a moderator. Alternate speeches pro and con. Stage rebuttals pro and con.
General discussion 	Maintain motivation. Provide for individual differences.	Arrange seating so all can be seen and heard. Select a discussion leader. Maintain informality. Stay on the subject. Direct comments to entire group. Summarize. (11, 12, 13)

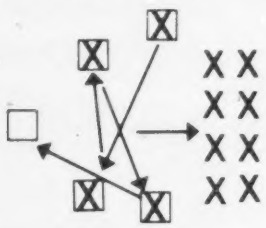
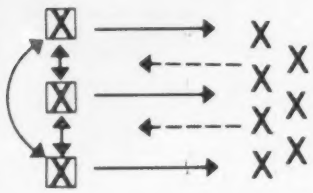
X Student

X Student in special role

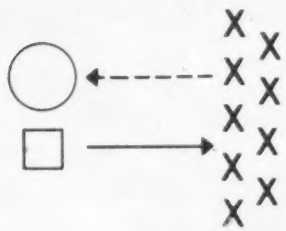
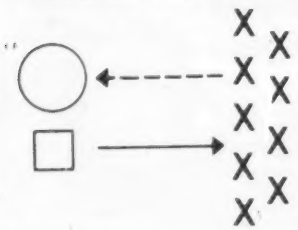
□ Instructor

→ Speech

A. Group interaction techniques (Cont'd.)

Teaching tools	*Teaching tasks well-suited for*	*How to go about it*
Panel discussion 	Present information in a logical sequence.	Decide on topic, select moderator, choose three to five panel members with differing opinions and experiences. Maintain informality, inviting comments from audience. (11, 13)
Role playing 	Maintain motivation. Provide exemplary models. Demonstrate skills. Guide initial trials.	Select two to four players and explain their roles and attitudes in seclusion from audience. Prepare audience for what they will observe. Stop role playing when interest is high. Discuss. (11, 13)

B. Visual aids

Charts and posters 	Maintain motivation. Present information in a logical sequence. Smaller groups.	Select only clearly supportive materials. Place chart or poster prominently. Introduce at proper time. Stand to the side. Explain chart or poster clearly. (14a, 14g, 14j)
Flannel and magnet boards 	Maintain motivation. Present information in a logical sequence. Demonstrate skills. Smaller groups.	Prepare all materials to be used beforehand. Practice presentation. Work standing to the side. Talk facing the class. Introduce materials at proper time. Explain clearly. (14b, 14j)

X Student

Student in special role

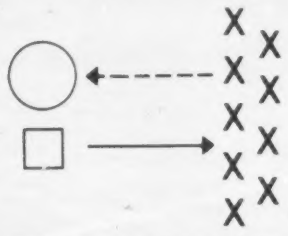
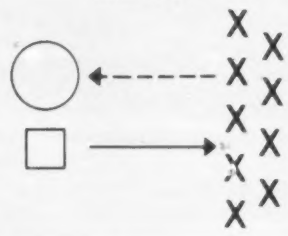
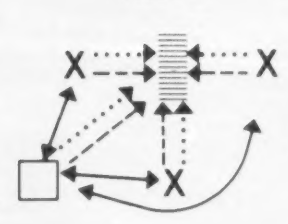
Instructor

→ Speech

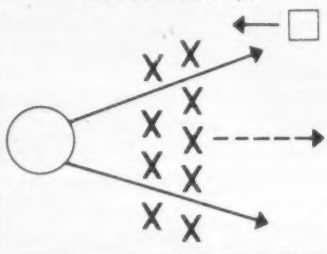
⇢ Visual or sight

Visual aids

B. Visual aids (Cont'd.)

Teaching tools	*Teaching tasks well-suited for*	*How to go about it*
Flip chart 	Maintain motivation. Present information in a logical sequence. Provide for recall. Smaller groups.	Prepare materials in proper sequence beforehand or practice illustrations. Situate flip chart prominently. Stand to the side. Introduce materials at proper time. Clearly explain. (14g, 14j)
Chalkboard 	Maintain motivation. Present information in a logical sequence, emphasizing particular points.	Eliminate glare. Erase irrelevant materials beforehand. Predraw (print) complicated diagrams; cover, uncover at proper time. Stand to the side. Face the class. Use pointer. (12, 14g, 14j)
Models 	Maintain motivation. Provide exemplary models. Present information in a logical sequence. Demonstrate skills.	Be familiar with models. Plan clear remarks. Use logical sequence. Label the model. Situate it prominently. Clearly explain. Use a pointer. Answer questions. (12)

C. Educational technology

Slides and film strips 	Maintain motivation. Provide exemplary models. Present information in a logical sequence.	Select pertinent materials. Preview. Prepare room. Gain knowledge of projector's use. Plan presentation and discussion. Show slides leading discussion as you proceed. (1, 12, 14d, 14e, 14f)

X Student

□ Instructor

→ Speech

--→ Visual or sight

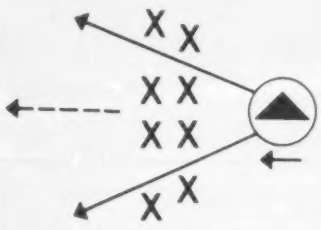
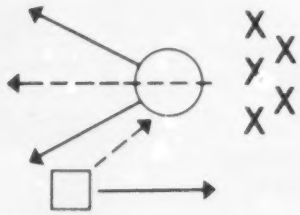
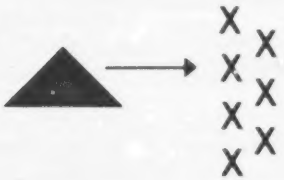
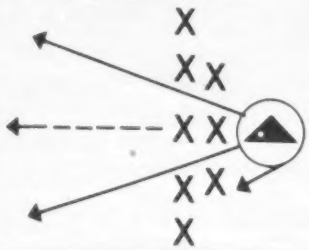
○ Visual aids

▯ Object(s) usually used for demonstrating — e.g. models

···→ Manipulation or use of other senses (touching, smell, taste)

Projection

C. Educational technology (Cont'd.)

Teaching tools	*Teaching tasks well-suited for*	*How to go about it*
Sound and motion pictures 	Maintain motivation. Provide exemplary models. Present information in a logical sequence.	Select films carefully. Gain complete knowledge of projector use. Preview film. Prepare equipment and location for projection. Orient students. Show film. Follow up with discussion. (1, 12)
Overhead projector 	Maintain motivation. Present information in a logical sequence.	Gain knowledge of projector use. Plan out presentations. Rehearse. Allow class participation. Vary your techniques. (12, 14e, 14j)
Audio tape recorder 	Maintain motivation. Present information in a logical sequence.	Gain knowledge of equipment. Plan. Select appropriate materials. Preview tapes. Check proper volume. Prepare listeners, clarify misconceptions. Present tape. Discuss. (1)
Single-concept films 	Maintain motivation. Present small amount of information in a logical sequence.	Select appropriate film or films. Gain complete knowledge of projector for use. Preview carefully. Prepare classroom. Plan lesson and discussion. Show film at appropriate time during session. Review and discuss the concept involved. (1)

X Student

Instructor

Speech

Visual or sight

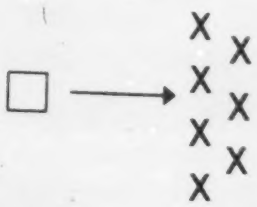
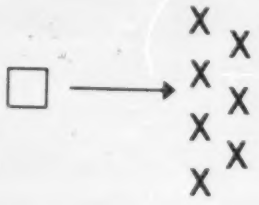
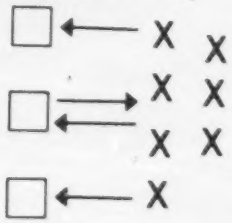
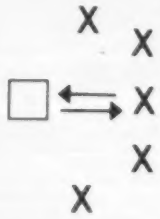
Projection

Visual aids

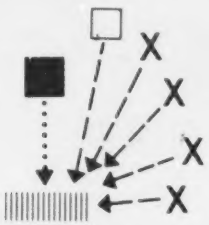
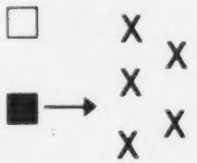
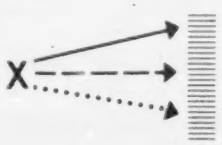
Audio-visual aids

Audio aids

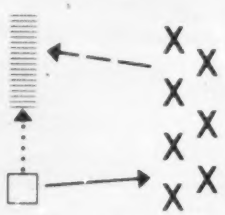
D. Teacher-centered techniques

Teaching tools	*Teaching tasks well-suited for*	*How to go about it*
Lecture 	Present information in a logical sequence. Demonstrate skills. Communicate. Teaching objectives.	Select appropriate topics. Organize and sequence the lecture. Be concise. Make it real and above all, interesting. (11, 12, 13)
Teacher explanation 	Present information in a logical sequence. Demonstrate skills. Guide initial trials.	Formulate clear statements. Stay on the topic. Observe for feedback. Summarize.
Team teaching 	Demonstrate skills. Guide initial trials. Manage practice effectively. Provide for individual differences.	The team of from two to six plan together. One teacher conducts the lesson while other teachers or aids answer students' questions or provide individualized instruction. The team evaluates together. A team may also be formed using students with special course-related skills. (11)
Problem-solving 	Present information in a logical sequence. Guide initial trials. Provide for recall. Apply knowledge to new situations.	Select problem area and define a problem statement. State decisions to be made. Identify alternative courses of action. Weigh alternatives on basis of pertinent factors. Formulate solution. (11)
Individualized instruction	Provide for individual differences in current knowledge and ability.	Determine pupil's special needs. Plan instruction. Provide materials and adequate study area. Instruct. Answer all questions. Evaluate. Plan new instruction. (1, 12)

E. Techniques for using community resources

Teaching tools	*Teaching tasks well-suited for*	*How to go about it*
Field trip 	Maintain motivation. Provide exemplary models. Demonstrate skills. Provide for individual differences.	Coordinate plans with all concerned in advance of trip. Arrange for transportation. Clearly explain the objectives to the class and host. Review and evaluate the experience. (1, 11, 12, 13)
Resource person 	Maintain motivation. Provide exemplary models. Demonstrate skills.	Contact resource person in advance and plan the presentation. Prepare the meeting room in advance. Preview the class. Conduct the class. Review the experience. (1, 12)
Learner collection of information 	Maintain motivation. Provide for individual differences. Provide for recall. Help individuals apply knowledge to new situations.	Outline the problem. Guide information collection. Explain. Give it meaning. Question. Evaluate.

F. Shop or laboratory experiences

Demonstrations 	Provide exemplary models. Present information in a logical sequence. Demonstrate skills.	Instructor selects materials and location. Presents the demonstration stressing key points and safety factors in under 15 minutes. Audience imitates demonstration with guidance from instructor. (11, 12)

X Student

□ Instructor

■ Outside instructor or resource person

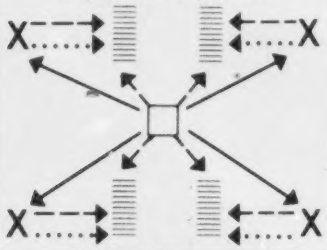
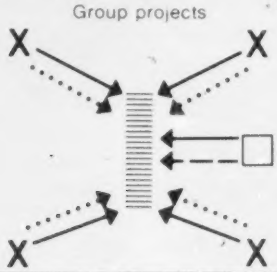
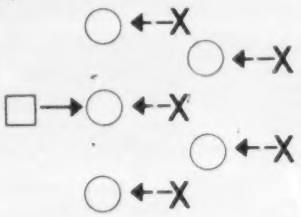
→ Speech

→ Visual or sight

····→ Manipulation or use of other senses (touching, smell, taste)

Object(s) usually used for demonstrating — e.g. models

F. Shop or laboratory experiences (Cont'd.)

Teaching tools	*Teaching tasks well-suited for*	*How to go about it*
Supervision of practice 	Guide initial trials. Manage practice effectively. Provide for individual differences. Provide feedback evaluation.	Become proficient in the task you will oversee. Organize to insure safety. Provide instruction as needed. Provide feedback. (12)
Individual projects	Provide for individual differences. Help apply knowledge and skills to new situations.	Provide for equipment and supplies. Guide project selection. Have learner draw a sketch and make up a bill of materials. Provide individual instruction as needed. Monitor to insure safety. Cooperative evaluation of project with students.
Group projects 	Maintain motivation. Help individuals to apply knowledge and skills to new situations.	Provide for equipment and supplies as well as interpersonal relations. Guide project selection. Provide individual and group instruction as needed. Monitor to insure safety. Cooperative evaluation with group. (1)
Use of job sheets 	Communicate teaching objectives to class. Present information in a logical sequence. Guide initial trials.	Teacher selects a task and prints a sheet of sequenced instruction for completing the task. Students must be capable of performing each step of outline. Prepare equipment. Distribute outline. Provide supervision and instruction. (12)

X Student

□ Instructor

→ Speech

○ Visual aids

→ Visual or sight

···→ Manipulation or use of other senses (touching, smell, taste)

Object(s) usually used for demonstrating — e.g. models

IV. REFERENCES CITED

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